

**WE CLAIM:**

1. A computer-implemented framework for managing application complexes, each application complex comprising multiple tiers of servers, where servers in a common tier run an identical application and servers in different tiers run different applications, and all the servers work together to provide a specific service, said application complex being definable via an application complex type, said framework comprising:

a plugin interface adapted for connection to the framework of a plugin in respect of each application complex type, wherein said plugin encapsulates a relationship between disparate resources composing the respective application complex type and respective characteristics of said resources, and

a user interface providing general tasks that are independent of operational semantics of the application complex and that is responsive to user operations for interfacing with the framework for defining an instance of the application complex and allowing the user to populate the application complex with servers.

2. The framework according to claim 1, wherein the plugin is adapted to convey to the framework information relating to the type of the application complex, the number of tiers, the application which the servers in each tier should run, and one or more properties of the application complex whose values can be specified by the user for each instance of the application complex type.

3. The framework according to claim 1, wherein the plugin is responsive to a change in one or more properties of the application complex for configuring at least one of said servers in accordance with said change.

4. The framework according to claim 1, wherein the plugin is adapted to convey to the framework information relating to one or more properties of the application complex whose values are to be monitored by the plugin and the plugin is adapted to

monitor said properties and return their respective values or functions thereof to the framework.

5     5.       The framework according to claim 4, wherein the plugin monitors said properties automatically.

6.       The framework according to claim 4, wherein the plugin monitors said properties in response to a request by the framework.

10    7.       The framework according to claim 1, wherein the plugin is responsive to a new server being added to a tier in the application complex for automatically configuring the new server and any other servers in the application complex that relate to the new server.

15    8.       The framework according to claim 1, wherein the plugin is responsive to a server being removed from a tier in the application complex for automatically re-configuring said server and any other servers in the application complex that relate to said server.

20    9.       The framework according to claim 1, wherein the plugin is adapted to request the framework for a new server.

10.     The framework according to claim 1, wherein the plugin is adapted to request the framework to remove a server that belongs to the application complex.

11. The framework according to claim 1, wherein the user interface is configured to allow a user to change one or more properties of any application complex instance created by the user.

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12. The framework according to claim 1, wherein the user interface is configured to display properties of any application complex instance created by the user and to allow one or more properties thereof to be changed.

10 13. The framework according to claim 1, wherein the user interface is a graphical user interface.

14. The framework according to claim 1, wherein the user interface is adapted to display current instances of application complexes and servers currently included in  
15 each tier thereof.

15. The framework according to claim 7, wherein the user interface is adapted to allow the user to move a server from a free pool of servers into a tier of an application complex instance, and the framework is responsive thereto for identifying the plugin  
20 corresponding to said application complex instance for requesting said plugin to reconfigure the server and any other servers in the application complex instance that relate to said server according to the properties of the application complex instance.

16. The framework according to claim 8, wherein the user interface is adapted to  
25 allow the user to remove a server from a tier of an application complex instance, and

the framework is responsive thereto for identifying the plugin corresponding to said application complex instance for requesting said plugin to reconfigure the server and any other servers in the application complex instance that relate to said server according to the properties of the application complex instance.

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17. The framework according to claim 1, wherein the user interface is adapted to allow the user to move a server from a tier of a first application complex instance to a tier of a second application complex instance, and the framework is responsive thereto for:

10 identifying the plugin corresponding to said first application complex instance for requesting said plugin to reconfigure the server and any other servers in the application complex instance that relate to said server according to the properties of the first application complex instance, the plugin being responsive to said server being removed from the tier in the first application complex for automatically configuring  
15 said server and any other servers in the first application complex that relate to said server; and

identifying the plugin corresponding to said second application complex instance for requesting said plugin to reconfigure the server and any other servers in the second application complex instance that relate to said server according to the  
20 properties of the second application complex instance, the plugin being responsive to said server being added to a tier in the second application complex for automatically configuring said server and any other servers in the second application complex that relate to said server.

25 18. The framework according to claim 17, wherein the first application complex instance and the second application complex instance are a single application complex instance and the user interface is adapted to allow the user to move a server from a first tier of said application complex instance to a second tier thereof.

19. The framework according to claim 4, wherein the user interface is adapted to display the monitored values for each of the monitored properties of any application complex instance created by the user and to interact with the plugin corresponding to each application complex instance to receive the monitored values.

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20. The framework according to claim 5, wherein the user interface is adapted to display the monitored values for each of the monitored properties of any application complex instance created by the user and to interact with the plugin corresponding to each application complex instance to receive the monitored values.

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21. The framework according to claim 6, wherein the user interface is adapted to display the monitored values for each of the monitored properties of any application complex instance created by the user and to interact with the plugin corresponding to each application complex instance to receive the monitored values.

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22. An object-oriented data structure for managing an application complex comprising multiple tiers of servers, where servers in a common tier run an identical application and servers in different tiers run different applications, and all the servers work together to provide a specific service, said application complex being definable via an application complex type and said object-oriented data structure comprising objects that encapsulate a relationship between disparate resources composing respective application complex types and respective characteristics of said resources thus allowing an instance of an application complex type to be defined.

23. A plugin including the object-oriented data structure according to Claim 22, and being adapted for connection to a framework that includes:  
a plugin interface adapted for connecting the plugin to the framework, and

a user interface providing general tasks that are independent of operational semantics of the application complex and that is responsive to user operations for interfacing with the framework for defining an instance of the application complex and allowing the user to populate the application complex with servers.

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24. A computer-implemented framework computer program product comprising a computer useable medium having computer readable program code embodied therein for managing application complexes, each application complex comprising multiple tiers of servers, where servers in a common tier run an identical application and servers in different tiers run different applications, and all the servers work together to provide a specific service, said application complex being definable via an application complex type, the computer program product comprising:

computer readable program code for causing the computer to interface a plugin to the framework in respect of each application complex type, wherein said plugin encapsulates a relationship between disparate resources composing the respective application complex type and respective characteristics of said resources, and

computer readable program code for causing the computer to respond to user operations input thereto via a user interface providing general tasks that are independent of operational semantics of the application complex for interfacing with the framework for defining an instance of the application complex and allowing the user to populate the application complex with servers.